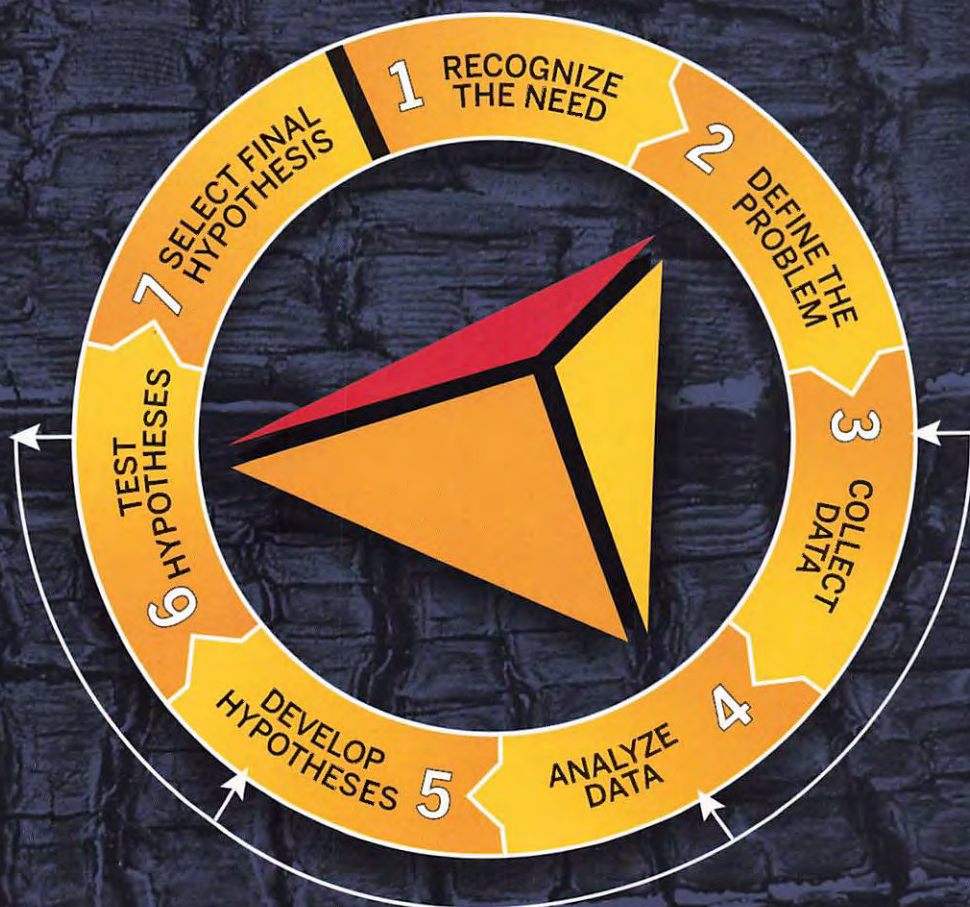


EXHIBIT 13

NFPA® 921

Guide for Fire and Explosion Investigations

2021



only nonmandatory provisions using the word “should” to indicate recommendations in the body of the text.

3.2.5* Standard. An NFPA Standard, the main text of which contains only mandatory provisions using the word “shall” to indicate requirements and that is in a form generally suitable for mandatory reference by another standard or code or for adoption into law. Nonmandatory provisions are not to be considered a part of the requirements of a standard and shall be located in an appendix, annex, footnote, informational note, or other means as permitted in the *NFPA Manual of Style*. When used in a generic sense, such as in the phrase “standards development process” or “standards development activities,” the term “standards” includes all NFPA Standards, including Codes, Standards, Recommended Practices, and Guides.

3.3 General Definitions.

3.3.1* Absolute Temperature. A temperature measured in Kelvins (K) or Rankines (R).

3.3.2 Accelerant. A fuel or oxidizer, often an ignitable liquid, intentionally used to initiate a fire or increase the rate of growth or spread of fire.

3.3.3 Accident. An unplanned event that interrupts an activity and sometimes causes injury or damage or a chance occurrence arising from unknown causes; an unexpected happening due to carelessness, ignorance, and the like.

3.3.4 Active Fire Protection System. A system that uses moving mechanical or electrical parts to achieve a fire protection goal. [3, 2018]

3.3.5 Ambient. Someone's or something's surroundings, especially as they pertain to the local environment; for example, ambient air and ambient temperature.

3.3.6 Ampacity. The maximum current, in amperes, that a conductor can carry continuously under the conditions of use without exceeding its temperature rating. [70, Article 100]

3.3.7 Ampere. The unit of electric current that is equivalent to a flow of one coulomb per second; one coulomb is defined as 6.24×10^{18} electrons.

3.3.8 Arc. A high-temperature luminous electric discharge across a gap or through a medium such as charred insulation.

3.3.9 Arc Mapping. Identifying and documenting a fire pattern derived from the identification of arc sites used to aid in determining the area of fire origin or spread.

N 3.3.10 Arc Melting. Melting of conductors and conducting surfaces as a result of electrical arcing. The characteristics of arc melting are described in 9.11.1.1.

3.3.11 Arc Site. The location on a conductor with localized damage that resulted from an electrical arc.

3.3.12 Arcing Through Char. Arcing associated with a matrix of charred material (e.g., charred conductor insulation) that acts as a semiconductive medium.

3.3.13 Area of Origin. A structure, part of a structure, or general geographic location within a fire scene, in which the “point of origin” of a fire or explosion is reasonably believed to be located. (See also 3.3.149, *Point of Origin*.)

3.3.14 Arrow Pattern. A fire pattern displayed on the cross-section of a burned wooden structural member.

3.3.15 Arson. The crime of maliciously and intentionally, or recklessly, starting a fire or causing an explosion.

3.3.16 Autoignition. Initiation of combustion by heat but without a spark or flame.

3.3.17 Autoignition Temperature. The lowest temperature at which a combustible material ignites in air without a spark or flame.

3.3.18 Backdraft. A deflagration resulting from the sudden introduction of air into a confined space containing oxygen-deficient products of incomplete combustion.

3.3.19 Bead. A rounded mass of resolidified metal on the end of the remains of an electrical conductor or conductors that was caused by arcing and is characterized by a sharp line of demarcation between the melted and unmelted conductor surfaces.

3.3.20 Blast Pressure Front. The expanding leading edge of an explosion reaction that separates a major difference in pressure between normal ambient pressure ahead of the front and potentially damaging high pressure at and behind the front.

3.3.21 BLEVE. Boiling liquid expanding vapor explosion.

3.3.22 Bonding. The permanent joining of metallic parts to form an electrically conductive path that ensures electrical continuity and the capacity to conduct safely any current likely to be imposed.

3.3.23 British Thermal Unit (Btu). The quantity of heat required to raise the temperature of one pound of water 1°F at the pressure of 1 atmosphere and temperature of 60°F; a British thermal unit is equal to 1055 joules, 1.055 kilojoules, and 252.15 calories.

3.3.24 Burning Rate. See 3.3.110, Heat Release Rate (HRR).

3.3.25* Calcination of Gypsum. A fire effect realized in gypsum products, including wallboard, as a result of exposure to heat that drives off free and chemically bound water.

3.3.26 Calorie. The amount of heat necessary to raise 1 gram of water 1°C at the pressure of 1 atmosphere and temperature of 15°C; a calorie is 4.184 joules, and there are 252.15 calories in a British thermal unit (Btu).

Δ 3.3.27 Cause. The circumstances, conditions, or agencies that brought about or resulted in the fire or explosion incident, damage to property, bodily injury, or loss of life.

3.3.28 Ceiling Jet. A relatively thin layer of flowing hot gases that develops under a horizontal surface (e.g., ceiling) as a result of plume impingement and the flowing gas being forced to move horizontally.

3.3.29 Char. Carbonaceous material that has been burned or pyrolyzed and has a blackened appearance.

3.3.30 Char Blisters. Convex segments of carbonized material separated by cracks or crevasses that form on the surface of char, forming on materials such as wood as the result of pyrolysis or burning.

Δ 3.3.31 Clean Burn. A distinct and visible fire effect generally apparent on noncombustible surfaces after combustible layer(s) (such as soot, paint, and paper) have been burned away.